The Information School of the University of Washington

Searching for Information

INFO/CSE100, Spring 2005

Fluency in Information Technology

http://www.cs.washington.edu/100

Readings and References

- Reading
  - *Fluency with Information Technology*
    - » Chapter 5, Searching for Truth
- References
  - Research 101, UW Libraries
    - » ***Research 101*** is intended to help students learn to perform basic information research so they can tackle information problems anywhere
    - » http://www.lib.washington.edu/uwill/research101/

Searching for Information

- The Web and its search engines have made it much easier to quickly find the top-level information about a topic
  - A simple Google or Yahoo search will turn up *something* on almost any topic
  - That's enough if you're just trying to get a general idea about a topic
- But what if you really care about the accuracy?
  - Look deeper, cross check, work with experts

Information Hierarchies

- Experts in a particular field usually organize the information about the field into a structure
  - If you understand the overall structure and ...
  - you want some detail, then ...
  - you can move quickly through the structure to the particular item of information that you seek
- This works very well
  - IF you know the structure well enough to navigate within it.
  - When you need to learn more about the topic

Biological Classification

Table 9b-1: Hierarchical system of the biological classification of an organism.

Category	Name	Characteristics
Kingdom	Plantae	Organisms that usually have rigid cell walls and usually possess chlorophyll.
Subkingdom	Embryophyta	Plants forming embryos.
Phylum	Tracheophyta	Vascular plants.
Subphylum	Pterophytina	Generally large, conspicuous leaves, complex vascular system.
Class	Angiospermae	Flowering plants, seed enclosed in ovary.
Subclass	Dicotyledoneae	Embryo with two seed leaves.
Order	Sapindales	Soapberry order consisting of a number of trees and shrubs.
Family	Aceraceae	Maple family.
Genus	Acer	Maples and box elder.
Species	Acer rubrum	Red maple.

From PhysicalGeography.net, http://www.physicalgeography.net/fundamentals/9b.html

Library Classification Systems

- Within a library collection, materials are typically organized by subject. Librarians assign a call number based on a work's subject
  - Library of Congress
    - » Used in most college, university, and research libraries because it handles large collections
  - Dewey Decimal
    - » Used in most public and school libraries because it is more effective for smaller collections

Library of Congress Classification

A -- GENERAL WORKS
B -- PHILOSOPHY. PSYCHOLOGY. RELIGION
C -- AUXILIARY SCIENCES OF HISTORY
D -- HISTORY (GENERAL) AND HISTORY OF EUROPE
E -- HISTORY: AMERICA
F -- HISTORY: AMERICA
G -- GEOGRAPHY. ANTHROPOLOGY. RECREATION
H -- SOCIAL SCIENCES
J -- POLITICAL SCIENCE
K -- LAW
L -- EDUCATION
M -- MUSIC AND BOOKS ON MUSIC
N -- FINE ARTS
P -- LANGUAGE AND LITERATURE
Q -- SCIENCE
R -- MEDICINE
S -- AGRICULTURE
T -- TECHNOLOGY
U -- MILITARY SCIENCE
V -- NAVAL SCIENCE
Z -- BIBLIOGRAPHY. LIBRARY SCIENCE. INFORMATION RESOURCES (GENERAL)

LIBRARY OF CONGRESS CLASSIFICATION OUTLINE

CLASS N - FINE ARTS

Subclass N Visual arts

Subclass NA Architecture

Subclass NB Sculpture

Subclass NC Drawing.Design.Illustration

Subclass ND Painting

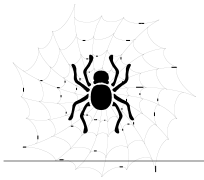
Subclass NE Print media

Subclass NK Decorative arts

Subclass NX Arts in general

Press 1 for sales, press 2 for …

- Hello, thank you for calling ...
  - press 1 for sales
  - press 2 for frequently asked questions
  - press 3 for account information
  - press 4 customer support
- Poorly designed phone menu hierarchies are a royal pain
  - dead ends are a waste of time
  - multiple steps to get to the desired information
  - designed to reduce costly customer interaction



Is the Web a hierarchy?

- Not a hierarchy, and that's good (to some)
  - A major part of its amazing success is that relevant information is just a click away,
  - That's why it's "The Web" not "The Tree"
- Not a hierarchy, and that's bad (to some)
  - Any web page can link to any other web page
  - This is causing heartburn among the gatekeepers
  - You can link directly to a page on a web site without going through a top-level page

In The Beginning

- When the Web was new
  - there was no hierarchy and ...
  - there was no way to find what you wanted other than careful detective work and keeping good notes
- Web detective games
  - How quickly can you find the following factoid?
  - Quite a challenge - those who knew their links could find information quickly

Now: Scan, then drill down

- Search engines do the top-level scanning for us
  - Enter your search term in Google, Yahoo, etc
  - You will get back a list of sites that are in some way related to your topic
- The links are entry points into the giant hairball that is the web
  - It's still not a hierarchy, but you can get close to the high value sites quickly
  - Drill down for information within those sites

Now: Select, then drill down

- Search engines are not the only way to get to the top of an information rich tree
  - UW Administrative information?
    - » UW Information Navigator page
  - Scholarly information?
    - » UW library has high-density information
  - Tax forms and laws?
    - » The IRS web site is the definitive source

Search Engines

- No one controls or assigns hierarchy locations to the pages published on the WWW ... it is totally decentralized
- To find pages, search engines crawl Web
  - Two parts
    - » Crawler visits Web pages building an index of the content
    - » Query processor checks user requests against the index, reports on known pages

Only a fraction of the Web's content is crawled

Be Specific!

thai	40,900,00
thai restaurants	3,830,00
thai restaurants seattle	218,000
thai restaurants seattle 98115	865
thai restaurants seattle 98115 vegan	67

Boolean Queries

- Search Engine words are independent
  - The words don't have to occur together on the page
- To be explicit about occurrences use Boolean queries and quotes
  - Logical Operators: AND, OR, NOT
    - » monet AND water AND lilies
    - » "van gogh" OR gauguin
    - » ("van gogh" or gauguin) AND paintings
    - » vermeer AND girl AND NOT pearl

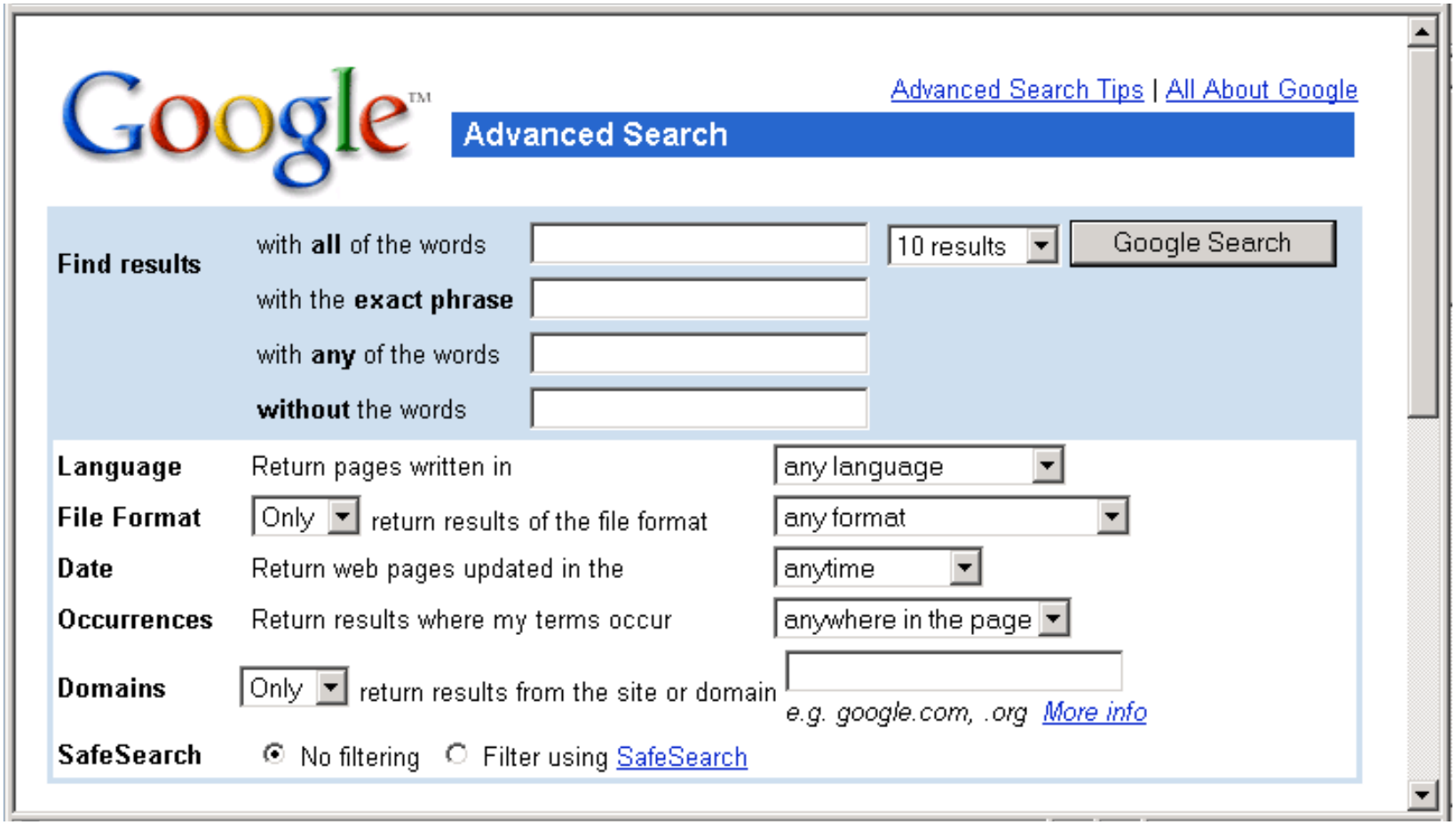
More Search Tips

- Not every search engine works the same way!
- Use quotes
  - "to be or not to be"
- Eliminate common words
  - a, the, and, or, not, to, be
- Use capitalization wisely
  - Apple computer vs. apple computer

Queries

- Searching strategies …
  - Limit by top level domains or format
  - Find terms most specific to topic
  - Look elsewhere for key words
  - Use exact phrase only when universal
  - If too many hits, requery
  - Once found, ask if site is best source

Google Advanced



Selected Sites

- For some searches, there are information rich areas in which to start. No need to Google.
- Scholarly material
  - UW Library
  - Library of Congress
- Government information
  - http://access.wa.gov/
  - http://www.firstgov.gov/

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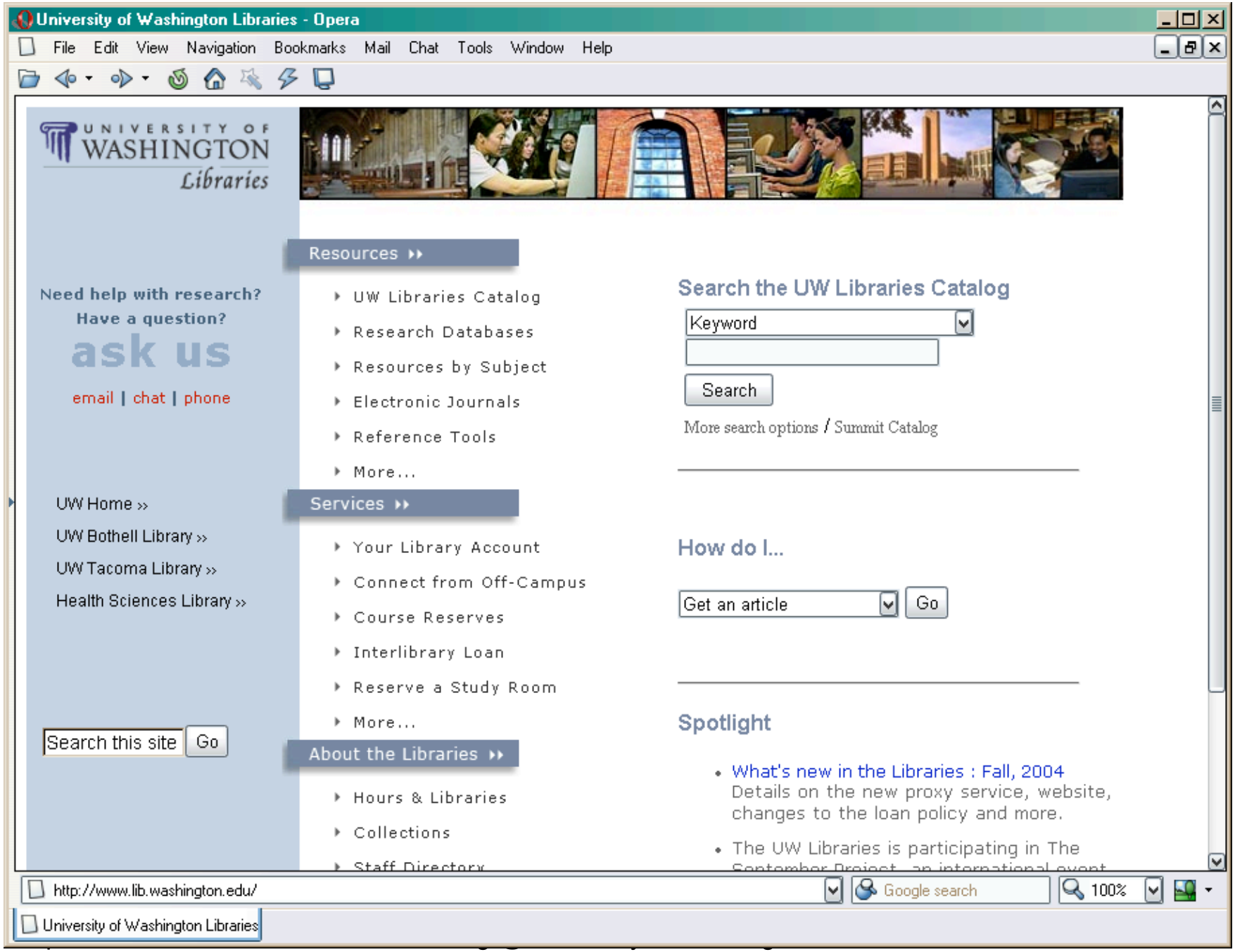

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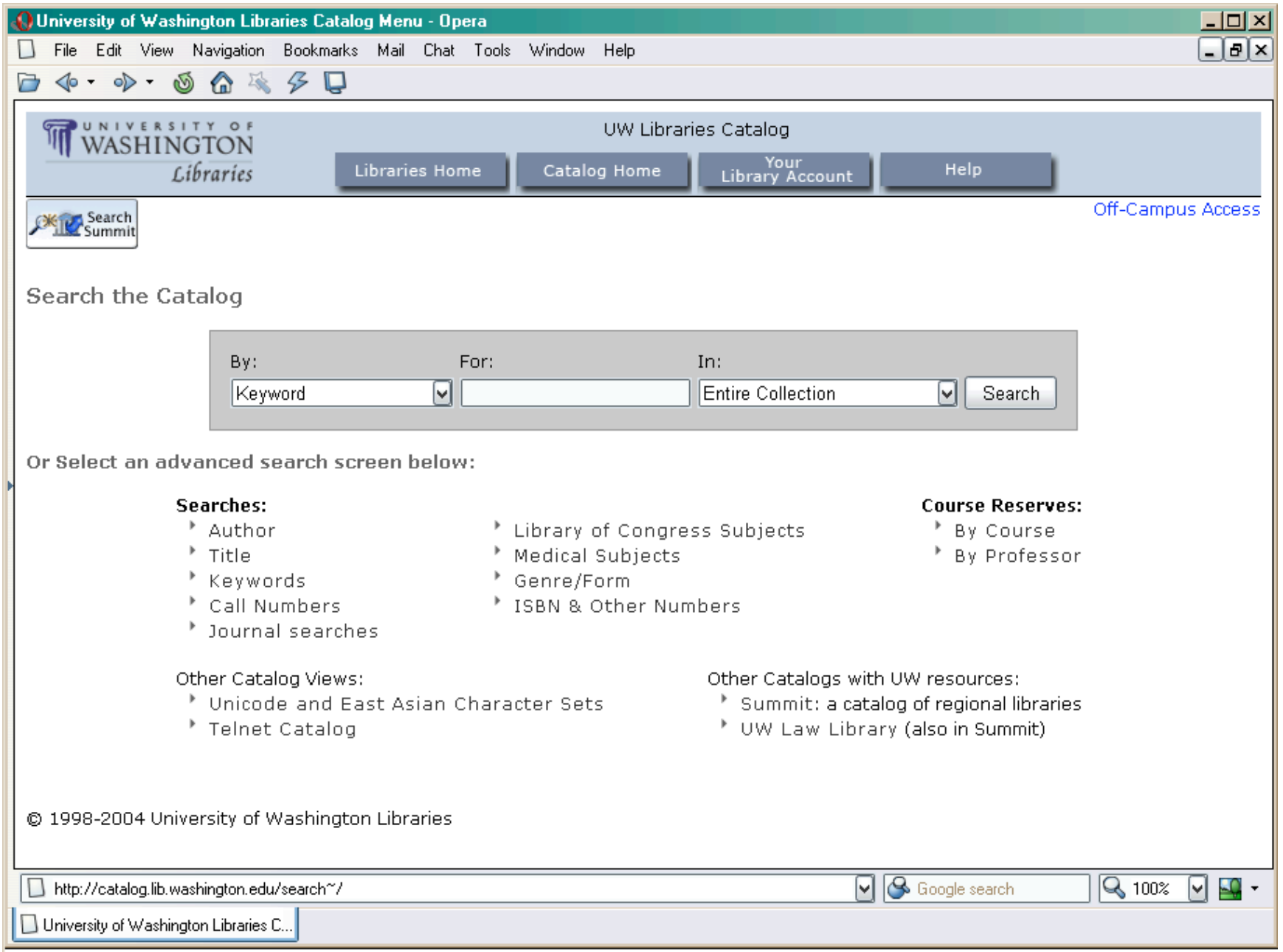

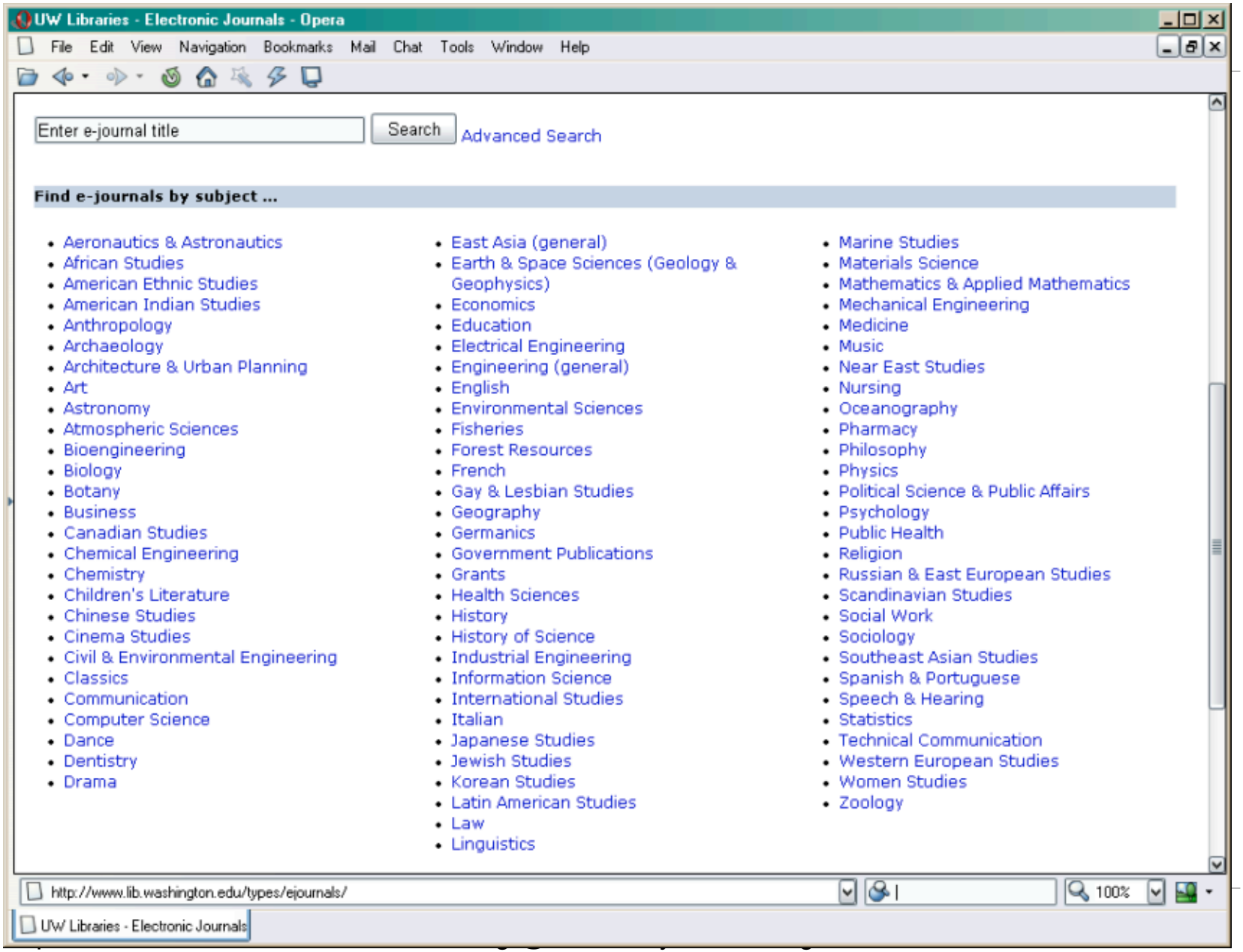
UW Libraries - Electronic Journals - Opera
File Edit View Navigation Bookmarks Mail Chat Tools Window Help
Enter e-journal title
Search
Advanced Search
Find e-journals by subject ...
Aeronautics & Astronautics
African Studies
American Ethnic Studies
American Indian Studies
Anthropology
Archaeology
Architecture & Urban Planning
Art
Astronomy
Atmospheric Sciences
Bioengineering
Biology
Botany
Business
Canadian Studies
Chemical Engineering
Chemistry
Children's Literature
Chinese Studies
Cinema Studies
Civil & Environmental Engineering
Classics
Communication
Computer Science
Dance
Dentistry
Drama
East Asia (general)
Earth & Space Sciences (Geology & Geophysics)
Economics
Education
Electrical Engineering
Engineering (general)
English
Environmental Sciences
Fisheries
Forest Resources
French
Gay & Lesbian Studies
Geography
Germanics
Government Publications
Grants
Health Sciences
History
History of Science
Industrial Engineering
Information Science
International Studies
Italian
Japanese Studies
Jewish Studies
Korean Studies
Latin American Studies
Law
Linguistics
Marine Studies
Materials Science
Mathematics & Applied Mathematics
Mechanical Engineering
Medicine
Music
Near East Studies
Nursing
Oceanography
Pharmacy
Philosophy
Physics
Political Science & Public Affairs
Psychology
Public Health
Religion
Russian & East European Studies
Scandinavian Studies
Social Work
Sociology
Southeast Asian Studies
Spanish & Portuguese
Speech & Hearing
Statistics
Technical Communication
Western European Studies
Women Studies
Zoology
http://www.lib.washington.edu/types/ejournals/
100%
UW Libraries - Electronic Journals

The Web and Reality

- The Web contains only a fraction of the information available to us
  - It provides a great tool for getting started with a topic
  - It provides rapid access to many significant collections of information
- The real world contains much, much more!
  - Use the Web as a map, then go exploring
  - Go to the library, talk to a librarian, read the primary sources, talk to the experts in the field